

Surviving the Computer Lab

A Real-World Weather Unit

Imagine this... As students walk into the room, I have a thunderstorm CD playing in the background. I ask the students to come into the room quietly and listen to the sounds. After taking attendance, students share what they heard: "thunder," "rain," "birds." I then tell them to watch the screen, where they see an online streaming video of a tornado. Students then share what they thought the event was called: "earthquake," "thunderstorm," "tornado." It was interesting to me that only some students knew what a tornado looked like. Inside I was really glad I decided to teach this lesson.

Throughout my 10 years working with students, I have seen some interesting approaches to technology instruction in the computer lab setting. When I began teaching technology, I realized how easily concepts were understood by students. All of my students had used a computer, and most had a computer at home. Students already knew how to play games. I wanted to bring them to a new level of expertise. I used the National Educational Technology Standards for Students (NETS•S) as a foundation to instruct my classes, and the students' technological skills and awareness grew tremendously.

As I began instructing students in the technology lab using these standards, I found there were no curriculum guides to help plan my ideas. I spent days researching and contemplating different ideas that I could use in the lab. At that point, I decided to

record many of my lesson ideas and strategies for other instructors to use in their classrooms. So I wrote the *Computer Lab Teacher's Survival Guide K-6 Units for the Whole Year*, published by ISTE.

Real-World Solutions

One of the units I created for my book is the Real-World Solutions Unit. It gives students an opportunity to relate technology to the real world and correlates to NETS•S 3 and 6. I thought about some current topics, such as world hunger or space travel, but I wanted something that would be easy for students to understand. I decided to use the fun and familiar science topic of weather.

Children seem to be awestruck concerning weather, especially natural disasters, so I decided to include seven major natural disasters in the unit. Most of the students I am teaching in California have never seen a tornado or been in a thunderstorm. The natural disaster Web sites I found online are wonderful for students. Some give an explanation of the disaster, pictures and video clips, and even how to protect yourself. The weather Web sites used for determining the current and past weather records are also wonderful. Many sites have links to virtual activities that can be done with another school or group.

My students thoroughly enjoyed this interactive unit—even the homework was fun to complete. Students learned about the major natural disasters in their city and other areas around the world. More importantly, students learn it is possible to read about natural disasters online and find out how to be safe during a particular storm. Also, students learn the concept of searching for current weather for any city in the world.

By Holly Poteete

Subject: Technology education

Audience: Teachers, teacher educators

Grade Level: 1–5 (Ages 6–10)

Technology: Internet

Standards: NETS•S 3, 6; NETS•T II, III (<http://www.iste.org/standards/>)

On a higher level, students will be able to transfer the understanding of searching about weather to another topic that could be searched online to locate real-time data for a particular problem.

The Real-World Solutions Unit includes three lessons: Real-World Problem Solving, Real-World Application, and Real-World Online Activities. The topic has been integrated for this unit so that the supplements, Web sites, and examples are based on weather. However, this unit may be modified to fit with any topic.

In the problem-solving lesson, students research natural disasters using the Internet and explain how to prepare for these storms. The application lesson provides students the opportunity to locate, record, and analyze weather conditions for specific places while realizing the implications of relating this data to their personal lives. The activities lesson, provides a collaborative group experience for students to collect and analyze data, make critical decisions, and solve problems using real-world situations. At the completion of this unit, students demonstrate an understanding that technology can be applied to real world situations.

Problem Solving Lesson— Natural Disasters

I demonstrate how to search for solutions to real-world problems. There are many ways to research, and the best method should be determined for each grade level. I teach older students how to research on the Internet and require them to complete a worksheet while researching. For example, a student volunteer could use the computer projector while another student explains the steps for online searching.

I discuss and explain each step of how to search on the Internet using search engines with the entire class. Be creative in asking students to retell the steps for researching and searching for appropriate information. I then explain that they will use these skills to answer some questions. They will also record which search engine was used and the words typed in the search engine. Students research the first question, “What is an earthquake?”, as a class using the computer projector. As students begin to give samples of which words to type in the search engine, I often see that they need some guidance. I question the class to get them to come up with some good solutions. I also remind the class to type in very specific words in the search box. After trying several different words, one class tried “earthquake definition”, “what is an earthquake?”, and “earthquake”. I try to instill that there is no one correct answer. I tell them that the hardest part about using a search engine is deciding what to type in the search box.

In some classes, I divide the students into pairs or small groups and assign one natural disaster to each group. In pairs, one person uses the computer to locate the answer to a question, and the other person writes the answer on the worksheet. Students could take turns in these roles. I use natural disaster cards to specify which disaster to focus on when researching. If a group receives a hurricane card, then they must become experts on this type of storm.

For younger students, I put links to some of the natural disaster Web sites on my individual site to make it easier for them to locate the information. (I have a shortcut on each computer to my Web site.) I display a Web site on the screen using the

computer projector and discuss how to find information, such as pictures, bold words, and hyperlinks. One or two Web sites could be chosen from the list of Natural Disaster Web sites. (*Editor’s note:* See Resources on p. 22.) This helps students successfully research because they will be focused on a particular Web site. Students use the Web sites to view pictures of the natural disasters and draw a sample of the disaster on the worksheet. When the students finish, I collect and grade the worksheets for completeness, and I display some on the bulletin board.

Real-World Applications Lesson— Recording Weather

In the next lesson, titled Real-World Applications, I give students the opportunity to find and record weather for various cities. A fun way to focus students on a particular topic is to tell a story. I tell the class a story about a family going on a picnic at the beach.

The Brown family was very excited about their trip to the beach, and they spent a lot of time preparing for the event. Finally, the moment arrived for the family to leave for the beach; and everyone was thrilled. After many long hours in the car, the Browns arrived at their destination only to realize that it was dark, cloudy, and raining. They were disappointed because they had to eat in the car. They were not able to go swimming or fly their kites because of the thunderstorm. They decided to make the best of a potentially bad experience and have a fun picnic in the car. What could the Browns have done to prevent the experience of picnicking on a rainy day?



After I finish telling the story, students are almost always interested in discovering what happened to the Brown family. They usually ask questions such as, “What did they do?” or “Where did they live?” After answering their questions, I tell them that it is possible to check the Internet to find out the weather forecast.

In the Real-World Applications lesson, I require older students to choose five cities in which to record the weather for one week. Most students choose at least one city in Europe or Australia. When students return the next week, it is always interesting to hear many of them say that they enjoyed the homework. We discuss the various weather observations they make concerning weather around the world. We talk about the coldest city and the hottest city. When we finish discussing the weather, I allow students to go to the weather Web sites to watch the streaming videos and search for some fun weather facts.

When students find something particularly interesting, I allow them to use the computer projector to show the entire class how to get to that place on the weather Web site.

For younger students, I dress up with a hat, gloves, jacket, and scarf while teaching the lesson. We discuss the reasons people wear particular types of clothing. I also use a weather bear to dress according to the current weather in a particular city. If it is raining, the bear could be dressed with a raincoat and rain boots. As a class, students view and record the weather in four cities and draw appropriate clothing for the bear using a weather bear worksheet. Students enjoy drawing the clothing for the bear. Before class, I search the weather Web sites to try and locate different types of weather, such as rain and snow in various cities. The different types of weather make the lesson lots of fun for the students.

Conclusion

This unit impresses students with the importance of knowing about all types of storms and what to do during a storm, as well as learning how to view current weather online. The deeper meaning of this lesson is that students will be able to apply real-world facts found online to their personal lives.

At the conclusion of this unit, I ask the classes how they can use the Internet to obtain real information; I am often surprised to hear their answers. One student said that her dad went online to buy airline tickets. Another student explained to the class the concept of eBay. Several students explained that they can now look at what the weather is like where their grandparents or other family members live. I was glad that this lesson seemed to affect the students so profoundly.

The techniques of instructing students using technology are end-

less, just as the methods of traditional instruction are endless. Envision a technological classroom environment that will best meet the needs of the students. Your excitement and new ideas will motivate students into becoming highly technologically literate lifelong learners. You are creating a technological foundation for students every day.

Resources

Natural Disaster Sites

- American Red Cross Disaster Safety: http://www.redcross.org/services/disaster/0,1082,0_501_00.html.
- BBC Natural Disasters: <http://www.bbc.co.uk/science/hottopics/naturaldisasters/>
- Division of Public Safety Emergency Preparedness: <http://www.nih.gov/od/ors/dps/emb/preparedness.htm>
- FEMA for Kids—Resources for Teachers: http://www.fema.gov/kids/tch_links.htm
- FEMA for Kids—The Disaster Area: <http://www.fema.gov/kids/dizarea.htm>
- Miami Museum of Science—Hurricane: <http://www.miamisci.org/hurricane/hurricane0.html>
- NASA Natural Hazards Research Web Links: <http://gcmd.gsfc.nasa.gov/Resources/printers/hazards.html>
- National Weather Service National Hurricane Center: <http://www.nhc.noaa.gov/>
- National Weather Service—Playtime for Kids: <http://www.nws.noaa.gov/om/reachout/kidspage.shtml>
- Tornadoes: <http://www.nssl.noaa.gov/researchitems/tornadoes.html>
- USGS TerraWeb for Kids—Links to Other Cool Web sites: <http://terraweb.wr.usgs.gov/TRS/kids/links.html>

Weather Sites

- CNN.com Weather: <http://www.cnn.com/WEATHER/>
- Weather.com: <http://www.weather.com/>
- Weather Online!: <http://www.weatheronline.com/localwx/>



Holly Poteete has experience in both public and private schools in Marietta, Georgia, and Salinas, California. She currently teaches technology for K–8 in Monterey, California. In addition to teaching, she is the founder of Teachers for Technology, a program that provides technology workshops to help teachers integrate technology throughout the curriculum.